



National Ecological Observatory Network (NEON)

Introduction

The National Science Foundation is funding and seeking to develop a nation- wide program aimed at improving the availability of and sharing of ecological data to address a wide variety of continental and regional scale issues. Those issues include things like climate change, invasive organisms and land use change. This program has come to be known as the National Ecological Observatory Network (NEON). For the past few years, National Science Foundation and NEON staff members have been engaged in nation- wide planning. Concurrently, an opportunity was provided for scientists to submit proposals for consideration of establishment of regionally based core study sites. Locally, staff at the Smithsonian (Conservation Research Center) has spearheaded the regional submission for the Mid- Atlantic Area. Shenandoah staff has been involved in preparation of that submission and is regarded as a full cooperator in the local effort.



NEON network spread over the country.

Management Needs

As indicated above, NEON is intended to improve the ability of scientists and decision- makers to deal with significant resource- based issues faced by the United States. These include climate change, invasive organisms, nitrogen deposition, land use change, and hydrologic issues. This is being achieved through establishment of a nation- wide monitoring network and series of study sites, through improved sharing of data, through remote sensing, and through education.

Shenandoah National Park is advantageously situated to participate in and contribute to this program. Clearly we face many of the issues identified by the National Science Foundation. Furthermore, park management should be based on sound scientific understanding. Participation in programs like NEON fosters the concept of “parks for

science and science for parks”. Participation opens the door for collaboration with scientists who have not previously worked in the park and who may have valuable perspectives on resource issues. Participation will also expand available data about the park and will permit access to data from outside sources.

Shenandoah National Park has a substantial record of relevant data that should prove itself to be of great value in this endeavor. We also have experience with long- term monitoring efforts and can provide study sites that have great scientific value in terms of their protected nature and in terms of the elevational gradient that exists in the park.



Portable NEON equipment.

Current Status

Park staff participated in the preparation of the proposal from the Mid- Atlantic area. The Mid- Atlantic proposal calls for the core site to be located at the Smithsonian Conservation Research Center. Presumably construction of laboratory facilities and installation of monitoring sites will occur at the Center within the next couple of years.

Shenandoah National Park has been identified as a satellite site. Satellite sites will potentially host three kinds of activities. These include Mobile Relocatable Systems (instrument towers) that could be placed at various sites for short durations; Rapid Deployment Systems that could be placed at various sites in response to events; and extensions of studies that may be going on at the Center. In this last case, this would probably involve installation of plots and transects within the park to compare to similar plots or transects on Center property.

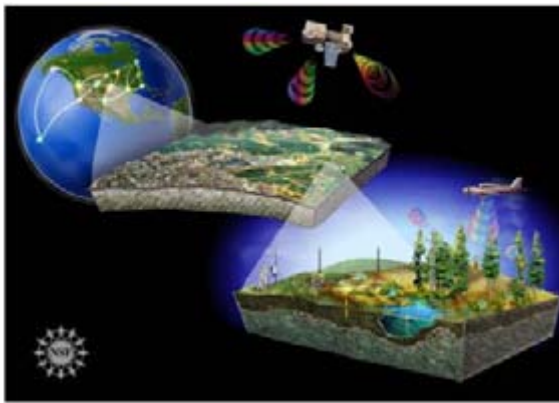
No specific locations for any of these activities have yet been identified as we are still too early in the planning. Shaver Hollow Research Natural Area has, however, been identified as one potential area for work. Details regarding



National Ecological Observatory Network (NEON) (continued...)

the methods to be employed have yet to be worked out but we can safely assume that much of what we will see in the future in the park is very similar to activities we already engage in. For instance, the core sites or sentinel sites are to gather data on birds, fish, and insects. We have many years of experience here with fish shocking transects, bird counts, mist netting of birds, and so forth. The instruments on the mobile towers will probably look very much like the current instruments that we run at the Big Meadows Air Quality Site. The specific instruments may be different but general tower appearance will be the same.

The proposal from the Mid- Atlantic area has been accepted as of February 2008 and currently awaits endorsement by the NEON Board of Directors.



Remote monitoring.

Future Directions

At this stage, we and the other cooperators in the Mid- Atlantic proposal are awaiting final approval from NEON and the National Science Foundation.

While many of the activities envisioned under the auspices of NEON will probably be categorically excluded under NEPA and have no effect on cultural resources, all appropriate compliance reviews will be done prior to field implementation. Scientific studies resulting from this effort will also be required to go through the Research Permit System.

References

Further information about NEON can be found at:
<http://www.neoninc.org/about- neon/overview.html>